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Department of Linguistics and English Language
Lancaster University
Lancaster, LA1 4YL, United Kingdom
[r.xiao@lancaster.ac.uk]

Sign language: An international handbook. Ed. by ROLAND PFAU, MARKUS STEINBACH, and BENCIE WOLL. (Handbooks of linguistics and communications science.) Berlin: De Gruyter Mouton, 2012. Pp. 1,126. ISBN: 9783110204216. \$425 (Hb).

Reviewed by SUSAN FISCHER, *Graduate Center, City University of New York*

Deaf people cannot hear, so they need a visual means of linguistic expression; sign languages provide that means of expression. Deaf people have been using some form of signing for millennia: Plato observed signing; so did Diderot. Psychologists and linguists in the nineteenth and early twentieth centuries dismissed signing as derivative or primitive; now sign languages are recognized as true languages with expressive capabilities and grammatical complexities equal to those of spoken languages. Modern linguists began studying the structures of sign languages about sixty years ago, first in only a few places, but more recently in many research institutions all over the world; increasing numbers of deaf and hearing linguists have contributed immeasurably to deeper insights into the structure and use of sign languages.

Pfau, Steinbach, and Woll's edited handbook of *Sign language (SL)* constitutes a massive and largely successful effort to bring together a reference on state-of-the-art thinking from a broad range of perspectives on sign languages, and the book's very existence demonstrates that the study of sign languages has come of age as a legitimate field of endeavor. The first four sections, comprising twenty-one chapters, address the traditional core linguistic categories of phonetics and phonology, morphology, syntax, and semantics/pragmatics. The remaining twenty-two chapters are divided into five sections: communication in the visual modality, psycholinguistics and neurolinguistics, variation and change, applied issues, and handling sign language data. The editors have assembled a group of authors who are among the best qualified to treat the subject matter they have been asked to address: here I would single out chapters by ONNO CRASBORN on phonetics, GAURAV MATHUR and CHRISTIAN RATHMANN on verb agreement, INGE ZWITSERLOOD on classifiers, DIANE LILLO-MARTIN on utterance reports and constructed action, SARAH TAUB on iconicity and metaphors, RONNIE WILBUR on information structure, VICTORIA NYST on shared (village) sign languages, SUSAN GOLDIN-MEADOW on home sign, DEBORAH CHEN PICHLER on acquisition, BENCIE WOLL on atypical signing, DANY ADONE on language emergence and creolization, SUSAN MCBURNEY on history, and CHRISTOPHER STONE on interpreting. Also of particular interest is the integration in several chapters of data with up-to-date linguistic theory. Unfortunately, space does not permit detailed discussion of these interesting efforts.

The earliest and most extensive research has been on American Sign Language (ASL), various western European sign languages, and sign languages in places settled by Europeans, such as Australia and South America. The content in *SL* is naturally dominated largely by European and North American researchers. Recent work on Asian sign languages, however, has led us to re-think some of our assumptions about how sign languages work and the range of grammatical pos-

sibilities. For example, in my early work on word order in ASL (Fischer 1974), I suggested that word order becomes more flexible if verb agreement is present. But Smith (1990) showed that there was another way to express grammatical relations in Taiwan Sign Language, namely a dummy auxiliary, analogous to *do* in English, that can carry agreement when the main verb does not. Later I found something similar in Japanese Sign Language, and it turned out that such auxiliaries also exist in Western sign languages such as those used in Denmark and the Netherlands, as discussed in GALINI SAPOUNTZAKI's chapter. Results from other non-Western sign languages have illuminated other areas, too, such as how the scope of operators is expressed. Crosslinguistic comparisons are capably and informatively discussed in a number of chapters, but only a couple of chapters have authors from other than English-speaking or European countries; one reason may be that some researchers from Asia and elsewhere do not publish in English, or even if they do, they do not publish in mainstream journals, so their work is inaccessible to most Westerners.

Perhaps because the book was already overlong, the editors permitted lacunae in several of the discussions. Some examples: phonological processes such as assimilation are not discussed at all in the phonology chapter, though they are mentioned in the morphology chapter; in fact, compared to the large sections on morphology and syntax, phonology is given somewhat short shrift. The chapter on pronouns makes no mention of zero pronouns; given the frequency with which many overt arguments are absent in most sign languages (Lillo-Martin 1986), this is a regrettable omission. Many other topics could also have been fruitfully included, if the editors had had more space and more organizational time. Some examples from my own wish list would include ethics in fieldwork, a serious examination of successful integration of spoken language grammar into signing, detailed examination of semantic ranges,¹ discourse and narrative, and second language acquisition.

I first got into sign language research by a fluke, but I remained in the field because I continue to believe that sign languages can answer important and interesting questions about language in general, and that they force us to face issues that need to be addressed in all linguistic research, but that we have previously gotten away with sweeping under the rug. What is the role of the channel of communication in acquisition, or processing, or, for that matter, in language structure itself? What is the influence of a person's first language on the second? Or of the second on the first (which happens in the case of native signers exposed to written or spoken language in school), especially when one of those languages has previously been stigmatized? How can we maintain confidentiality in a corpus when it involves video? Many of these issues are clearly addressed in *SL*, especially in the second half of the book, and this should serve as a spur for spoken-language linguists to address them too.

Deafness, particularly deafness that occurs before language is acquired, is normally quite rare: in the US, estimates are that between 0.2% and 0.5% of the population are prelingually deaf (<http://libguides.gallaudet.edu/content.php?pid=119476&sid=1029190>). Furthermore, fewer than 10% of deaf children have deaf parents or even older siblings from whom they could learn a sign language (Schein & Delk 1974). What this means concretely is that in most societies deaf children are, at best, first exposed to a sign language at school. Special schools for deaf children, then, especially residential schools where they have opportunities to interact outside of the classroom, are crucial for the development and transmission of sign languages. That is why the editors of this volume saw fit to include chapters on deaf education as well as alternative means of visual communication. Sign languages used to be banned in many primary schools, but more recently have been recognized as second or heritage languages. With more and more children receiving cochlear implants, however, the pressure is on once again to emphasize speech and oral education to the detri-

¹ For example, the ASL sign usually glossed as WRITE semantically requires a stylus, and hence has a narrower semantic range than the English word *write*. Contrariwise, there is one sign in ASL that means roughly that some event had not occurred by the expected time; it is covered by the two English locutions *late* and *not yet*.

ment of natural sign languages, and to use natural or, more frequently, artificial sign systems (see Fischer 1998 for clarification of these terms) in their place. Ironically, just as sign languages have gained recognition as legitimate languages, a number of researchers have lamented that some sign languages could be endangered in a couple of generations. That is yet another reason why *SL* is such a significant milestone.

SL contains some organizational infelicities. For example, Susan McBurney's outstanding chapter on the history of sign languages and sign linguistics could have served as an excellent introduction to the book, especially for nonspecialists, but instead it is buried in the 'Applied issues' section starting on p. 909. Lillo-Martin's chapter would have flowed better had it been preceded by the chapter on the use of space. A number of chapters unnecessarily repeat material from others, sometimes adjacent and sometimes not. The chapters in a couple of sections have little to do with each other. Some terminology is not adequately defined for readers new to sign language literature or conventions. For example, there is a concept in sign language phonology, going back to Mandel 1981, of SELECTED FINGERS: these are fingers in a sign language handshape that matter more than others; they are the ones that can touch or be touched and their exact configuration is important, while other fingers have fewer privileges of occurrence and their exact position is less important. DIANE BRENTARI's chapter on phonology makes crucial use of this term but does not explain it.

Individual chapters display an inconsistent philosophy in bibliographical citations: some go back to the earliest discussion of a phenomenon, while others cite only recent literature. My own preference—perhaps because my early work is variously cited or slighted in this volume—is to cite the earliest mention and then follow up with discussion of recent literature, to show how the accounts in that first mention have been subsequently refined or discredited.

The book contains separate indices for signed and spoken languages, as well as a subject index, but no name or author index; this would not matter so much but for the fact that there is no master list of references at the end; rather, references are placed at the end of each chapter, making it a tedious job to search for references by name. The subject index is inconsistent and incomplete. For example, fingerspelling played a crucial role in the history of deaf education (for example, in sixteenth-century Spain); it is mentioned in the chapter on the history of sign languages and sign linguistics, but that mention is not included in the index. There are stylistic and occasional grammatical infelicities, misspellings of several authors' names, and one chapter whose reference list was published in unfinished form. In another chapter the figure references do not match the figure numbers, and it seems that some page references in the subject index were not updated. The high price means that only libraries and maybe a few individual linguists will buy *SL*; many of the chapters deserve to have wide recognition, so it might have been wise to divide the book up into two or three smaller volumes: just holding it constitutes weight-bearing exercise.

Minor quibbles aside, putting together the papers in this compendium is a praiseworthy accomplishment. *SL* will be useful to sign language scholars as well as to linguists new to the field who want to know definitively what sign language linguistics is about. It is also to be hoped that *SL* will serve to demonstrate to other scholars and educators who deal with deaf persons that sign languages—and their users—are worthy of respect.

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[sfischer@gc.cuny.edu]

Rich languages from poor inputs. Ed. by MASSIMO PIATTELLI-PALMARINI and ROBERT C. BERWICK. Oxford: Oxford University Press, 2013. Pp. xiii, 313. ISBN 9780199590339. \$110 (Hb).

Reviewed by IRIS BERENT, *Northeastern University*

This collection is a celebration of the late Carol Chomsky's bold, pioneering lifework. It is also an opportunity to reflect on the state of the art in linguistics and its sister disciplines—psycholinguistics and reading research—on three questions that are at the heart of her legacy: the richness of language acquired from impoverished input, its gradual development, and its role in reading and writing. The three parts of this volume address each of these questions in turn.

A rather humbling demonstration of the resilience of language to extreme sensory deprivation is presented by Carol Chomsky's own work on the linguistic abilities of deaf-blind individuals who acquired language haptically, via the Tadoma method (a method that allows language learners to perceive speech by placing their hand on the face and neck of the speaker). Despite radical limitations in input, the linguistic capacities of these individuals are nearly intact; the detailed case studies are reprinted in the final chapter of this volume. Another linguistic triumph in the face of sensory adversity is the ability of blind children to infer the root meaning of verbs such as *see* and *look* from their unique syntactic structure and the putative universal rules linking syntax to semantics—a case documented with great clarity and elegance in the chapter by LILA GLEITMAN and BARBARA LANDAU.

Poverty of stimulus, however, is not restricted to sensory deprivation, nor is it unique to the deaf and blind child. And indeed, big (linguistic) data do not provide discovery procedures for grammatical rules. Just as the impoverished sensory input available to the blind child fails to specify the semantics of *see*, so does the myriad of linguistic evidence available to typical children underdetermine which aspect of the input—word order or syntactic structure—is relevant for sentence structure. This conundrum, outlined by Noam Chomsky over four decades ago (1968), relates to the challenge of forming polar interrogatives with relative clauses (PIRC, see 1a), a task accomplished by children within the first four years of life (Crain & Nakayama 1987).

- (1) a. Is the little boy who is crying hurt?
 b. The little boy who is crying is hurt.

But whether children do in fact lack the linguistic evidence necessary to solve the induction problem has been the subject of debate. The three chapters by XUAN-NGA CAO KAM and JANET DEAN FODOR, by ROBERT BERWICK, NOAM CHOMSKY, and MASSIMO PIATTELLI-PALMARINI, and by Noam Chomsky revisit this challenge.

Kam and Fodor's detailed analysis of word-learning bigram models (Reali & Christiansen 2005) demonstrates that, absent an inherent bias to attend to syntactic structure, learners fail at even the simplest task of distinguishing well-formed sentences from ill-formed ones. Similar limitations are documented by Berwick, Chomsky, and Piatelli-Palmarini in two other models—a trigram version based on Reali & Christiansen 2005 and the 'weak substitutability' approach of Clark & Eyraud 2007. According to Berwick and colleagues, the insensitivity to structure (a property they distinguish from the representation of hierarchical structure) also persists in a Bayesian selection model (Perfors et al. 2011).